CSR, financial performance and risk: Does it add up for mid-caps?

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WORKING PAPER

Abstract

The purpose of this paper is to establish whether there is a link between Corporate Social Responsibility (CSR) scores, Corporate Financial Performance (CFP) and risk in US mid-cap firms. Whilst much previous work has been carried out on large-cap firms, the mid-cap sector has been neglected in academic literature and by the investor/analyst world.

The CSR scores from a sample of 365 large-cap, 279 mid-cap and 356 small-cap firms from the US S&P stock indices were regressed against a range of market-based, accounting-based and risk-based variables to assess whether there was any correlation between them.

Whilst positive findings were made for the large-cap and small-cap firms, there was little evidence of any such relationship for mid-cap firms.

These findings fill a gap in the literature on a much neglected but unique market sector, which is of importance to those who work within that sector, in that they may gain a better understanding of the implications of their unique environment, but also for investors and analysts alike who have hitherto largely ignored the mid-cap sector.

Keywords: large-caps, mid-caps, small-caps, CSR, CFP, risk.

Introduction

Research on the effects of Corporate Social Responsibility (CSR) and Corporate Financial Performance (CFP) are not new. There have been hundreds of studies since the 1970s: some have found a positive relationship (for example, Sturdivant & Ginter 1977; Spicer 1978; McGuire et al. 1988; Orlitzky 2001a; Orlitzky et al. 2003; Gama Boaventura et al. 2012; Chung & Pyo 2013), some a negative relationship (for example Chen & Metcalf 1980), some a neutral relationship (for example, Alexander & Buchholz 1978; Aupperle et al. 1985; Pava & Krausz 1996; McWilliams & Siegel 2001) and some studies have found a U-shaped relationship (for example, Bowman & Haire 1975; Barnett & Salomon 2012).

The main two theoretical strands to the CSR-CFP debate are the business case (Friedman 1970) and stakeholder theory (Freeman 1984). From the business case perspective, CSR activities should only be adopted if they increase shareholder wealth, whereas proponents of stakeholder theory suggest that the role of business is to attend to the requirements of a broader range of stakeholders than only the capital providers. The vast majority of papers adopt the business case theory, in that without seeing a financial benefit to investing in potentially non-core activity such as CSR, firms would not normally choose to spend money or other resource on activities without a financial payback. This is largely because in the Western world (and the vast majority of studies are US-based), stock markets reward short term actions which drive up financial performance and hence wealth. To divert funds away from such activities is regarded as potentially irresponsible (Friedman 1970). Whilst these theories principally assume that CSR drives financial performance, there is also a reverse

argument which centres on whether or not the relationship is one-way or whether improved financial performance is also a pre-requisite to improved CSR performance (reverse causality/slack resources theory) (Waddock & Graves 1997). This suggests that firms need to have sufficient resources to invest in CSR in the first place, which then result in better performance and hence a virtuous circle continues. We will return to this argument later in this paper.

The proponents of the business case suggest that investment in CSR improves financial performance and reduces risk, not least because it can improve sales (Waddock & Graves 1997), but it can also reduce litigation costs and hence risk. As an illustration, by having good environmental practices, firms are less likely to pollute the environment and be fined (Spicer 1978). This can lead to increased share prices, but also a reduction in costs. This cost reduction arises due to the lower litigation costs, but also the cost of hiring and retaining employees, who are more likely to be attracted to an employer which considers CSR issues (McWilliams & Siegel 2001). Reduced costs then lead to increased profits, improving returns such as return on assets (ROA) and return on equity (ROE). Detractors of CSR note that CSR actually increases costs to implement activities and can detract from the profit-making motive (Freeman 1999). Increased stock prices through higher or more reliable (less risky) profits will also affect market metrics, such as Tobin's Q. Tobin's Q is a ratio of firm market value to replacement cost of assets. A low score (between 0 and 1) may indicate that the stock is undervalued as the cost to replace a firm's assets is greater than the value of its stock. A high score (greater than 1) may indicate that a stock is overvalued since the stock is more expensive than the replacement cost of its assets.

Most previous studies on CSR-CFP focus on large US companies (only the S&P500) using a CSR proxy database called KLD (e.g. Waddock 2003). Whilst such studies note that the business case for CSR appears to weaken the smaller firms become, there is no further examination of that assertion. This study therefore aims to investigate whether the characteristics of firms (such as size as expressed by market capitalisation) has an impact on any CSR-CFP relationship in the UK. Market capitalisation is derived from the market price of an ordinary share multiplied by the number of shares in issue. It is a measure of size but also of market value. It varies over time as both market prices change and shares are issued or re-purchased. In order to differentiate between different sizes of firms, stock exchanges and analysts divide firms by their market capitalisation into large-cap, mid-cap and small-cap.

There is no universally accepted definition of what constitutes large-cap, mid-cap or small-cap (Reckamp 2014). Some analysts use a certain percentage of firms in the stock exchange (e.g. large-caps equate to the largest 70% of the market) (Switzer 2010) whilst others use financial bands (Reckamp 2014). This banding method may consider large-caps as those firms with a market capitalisation of greater than $10 billion, mid-caps as between $2 billion and $10 billion and small-caps as those with a market capitalisation of less than $2 billion (Mutualfundstore 2015). Clearly, over time, there is movement in firms' market capitalisation which can cause them to move out of one category and into another. This is considered in many market indices, such as Standard & Poors (S&P), by regularly reviewing constituents of such indices, so that the top 100 firms by market capitalisation constitute the S&P100, and

so on. In the US stock market, large-caps are encompassed within the S&P500, mid-caps in the S&P400 and small-caps in the S&P600. This broadly equates to large-caps having a market cap in excess of $5.36 billion, mid-caps between $1.4 and $5.9 billion and small-caps between $400 million and $1.8 billion.

The mid-cap sector specifically has not been the subject of a study on CSR to date, and indeed is 'often underappreciated by investors and under-followed by analysts' (Kolefas & Scalise 2012). As a sector of businesses it is of interest since mid-caps have consistently outperformed large-caps in terms of financial performance since the late 1970s (Goldberg 2016; Thune 2017; Light 2016), however they are very under-represented by academic literature and industry analysis which tend to focus on either the large-caps or small-caps, despite generally more impressive and consistent performance (Light 2016; Kolefas & Scalise 2012).

Mid-caps differ from large-caps in two main areas: risk profile and growth potential (Neville 2010). Whilst large-caps are stable in that they can weather recessions more successfully than smaller firms (Mutualfundstore 2015) and have vast resources at their disposal, their size and corporate structures can make them slow to react to changes in their environment (Morningstar 2015). They also have much more limited scope for substantial growth and expansion given their already substantial size. As a result of this stability and large resource base, large-caps tend to be lower risk investments and provide more reliable dividends. However, mid-caps represent what is often referred to as the 'sweet spot' for investors (Light 2016; Kolefas & Scalise 2012), offering many of the benefits of large-caps without some of the volatility of the small-caps. They have 'seasoned management teams, sophisticated information technology, broad distribution channels, strong overall market presence and ready access to capital markets' (Kolefas & Scalise 2012), combined with lower levels of bureaucracy which render them more able to react quickly to market changes than large-caps (Light 2016). Mid-caps are also often acquired by larger companies as a way to increase market share or to gain access to new markets/technology/intellectual property or economies of scale.(Thune 2017; Kolefas & Scalise 2012). They do however present greater risk for the investor than large-caps, but less volatility than small-caps (Morningstar 2015). During economic downturns, investors tend to move to the larger stocks and the number of trades in mid-caps falls more than for the large-caps (Naacke & Hirsch 2012).

Therefore, because of their intrinsically different characteristics, it would be inappropriate to extrapolate the results of large-cap US studies on to smaller firms without further research. If empirical evidence is to inform management action as to which CSR activities are the most appropriate for a mid-cap firm given its resource base relative to a large-cap, it is essential to examine CSR and CFP within mid-caps more fully. Therefore, this paper will examine mid-caps to determine if their characteristics and situation differs with regards to the outcome of the CSR/CFP relationship.

Choice of methodology

Early CSR-CFP studies focused on either reputational surveys (asking management how they believed firms scored on CSR performance) (Moskowitz 1972; Bragdon & Marlin 1972) or

content analysis of annual reports for the CSR proxy (Abbott & Monsen 1979; Alexander & Buchholz 1978). These approaches have been criticised for not being independent (Mattingly & Berman 2006) or challenged as to whether CSR reporting reflects actual activity (Ingram & Frazier 1980; Cochran & Wood 1984). During the 1990s, the first independent ratings firm emerged called KLD (Kinder Lydenberg and Domini). Designed as a tool to provide non-financial information on firms to aid investors' decision-making with regards to socially responsible investing, KLD has now become the de-facto standard for gathering CSR data on firms independently from the firms themselves (Waddock 2003). Hence most studies now adopt a quantitative, rather than qualitative approach.

Whilst the extensive use of the KLD database has moved the CSR/CFP literature on considerably, it also focuses the research on larger US firms, (e.g. Orlitzky et al. 2003; Orlitzky 2011; Cordeiro & Tewari 2014; Capelle-Blancard & Petit 2014) as KLD does not cover non-US firms. This has resulted in quite limited knowledge of how the CSR/CFP linkage may translate into other international jurisdictions or in smaller firms. There have been no studies specifically addressing CSR in mid-cap firms despite their importance to world economies as major employers and creators of wealth and returns as noted above (Mutualfundstore 2015; Naacke & Hirsch 2012).

Over recent years, there has been an increase in the number of CSR ratings firms (e.g. Asset4, Sustainalytics). The remit for these companies, like that of KLD, is to provide CSR information to analysts and investors to allow them to make more informed choices about the firms they invest in beyond purely financial data and to support active portfolios in ethical investments. These ratings firms also now provide data on an increasingly wide range of stock market participants (large and small) where possible. This is the case with the Bloomberg Professional, a stock market investor portal, which is the data source for this paper.

The most common quantitative methodology in the literature is performing ordinary least squares (OLS) regressions against either market-based or accounting based financial proxies (Griffin & Mahon 1997; Sharfman 1996; Lu & Abeysekera 2014). Whilst early studies (such as Moskowitz (1972) and Bragdon and Marlin (1972) used stock market-based proxies for the CFP variables, later papers criticised this approach as such variables are open to other influences, not just CSR. Hence most studies since have adopted a mixture of both stock market and accounting based proxies (Spicer 1978; Cochran & Wood 1984; McGuire et al. 1988; Attig et al. 2013; Lioui & Sharma 2012; Kang et al. 2010).

Various previous studies have introduced a number of control variables which may affect the relationship between CSR and CFP. These include firm size (Attig et al. 2013; Bansal et al. 2015; Chang et al. 2014; Kang et al. 2010; Inoue & Lee 2011; Park 2014; Gimenez et al. 2012; Crisóstomo et al. 2011; Lioui & Sharma 2012; Mio & Fasan 2012), risk (Park 2014; Lee et al. 2013; Crisóstomo et al. 2011; Mio & Fasan 2012), industry (Bansal et al. 2015; Gregory & Whittaker 2013; Crisóstomo et al. 2011), leverage (Bansal et al. 2015; Chang et al. 2014; Kang et al. 2010; Inoue & Lee 2011; Cho et al. 2013; Lee et al. 2013; Crisóstomo et al. 2011; Lioui & Sharma 2012; Mio & Fasan 2012), R&D spend (Gregory & Whittaker

2013; Lioui & Sharma 2012) and capital intensity (Park 2014) (which is often industry specific). Many of these controls have also been adopted in this paper.

In order to assess performance against a variety of variables, three initial hypotheses were tested for large-caps, mid-caps and small-caps in the US S&P indices, based on the literature discussed earlier.

Hypothesis 1: Firms with higher overall CSR scores (ESG) will exhibit higher market-based financial performance as proxied by Tobin's Q (TOBQ) and excess market returns (EXRET), controlling for total assets as a proxy for firm size, earnings before interest and tax (EBIT), industry (IND), sales growth (SALESGROW), leverage (DEBTEQY), market volatility (HISTBETA) and risk, proxied by Weighted Average Cost of Capital (WACC). Excess returns are included as a variable in the Tobin's Q iteration to improve the fit of the model, but is removed when the dependent variable is excess returns. This hypothesis is described in the following equation:

$$Market - based\ financial\ performance = \alpha + \beta^T ESG_{it} + \beta^T TOTASSET_{it} + \beta^T EBIT_{it} + \beta^T SALESGROW_{it} + \beta^T DEBTEQY_{it} + \beta^T HISTBETA_{it} + \beta^T IND_{it} + \beta^T EXRET_{it} + \beta^T WACC_{it} + \varepsilon_{it}.$$

Hypothesis 2: Firms with higher overall CSR scores will exhibit higher accounting based financial performance as proxied by return on equity (ROE), controlling for the same variables as in hypothesis 1 to give the following equation:

$$\begin{aligned} Accounting - based\ financial\ performance \\ = \alpha + \beta^T ESG_{it} + \beta^T TOTASSET_{it} + \beta^T EBIT_{it} + \beta^T SALESGROW_{it} \\ + \beta^T DEBTEQY_{it} + \beta^T HISTBETA_{it} + \beta^T IND_{it} + \beta^T EXRET_{it} + \beta^T WACC_{it} \\ + \varepsilon_{it} \end{aligned}$$

Hypothesis 3: Firms with higher overall CSR scores will exhibit a lower risk, as proxied by Weighted Average Cost of Capital (WACC) and market beta (HISTBETA). The control variables are the same as in hypotheses 1 and 2, with the appropriate exclusion of the relevant variable (WACC or HISTBETA) when they are the dependent variable. This hypothesis gives the following equation:

$$\begin{aligned} Risk - based\ financial\ performance \\ = \alpha + \beta^T ESG_{it} + \beta^T TOTASSET_{it} + \beta^T EBIT_{it} + \beta^T SALESGROW_{it} \\ + \beta^T DEBTEQY_{it} + \beta^T HISTBETA_{it} + \beta^T IND_{it} + \beta^T EXRET_{it} + \beta^T WACC_{it} \\ + \varepsilon_{it} \end{aligned}$$

Data source:

A range of data for both CSR and financial proxies has been obtained from the Bloomberg Professional database for three US stock market indices: S&P500 (large-cap), S&P400 (mid-cap) and the S&P600 (small-cap).

A time period of nine years was selected (2007-2015 inclusive). This represents the longest period for which Bloomberg CSR data is reliably available. Data was obtained for the same

firms (a cross sectional study) across the nine-year time period (longitudinal study), creating a panel dataset. The data was cleansed to remove any firms for which data was not available for the whole nine year period. For the large-cap sample, this resulted in a reduction from 505 firms to 365, for the mid-cap sample from 400 firms to 279 and for the small-cap sample from 601 firms to 356. All variables chosen for this paper (whether dependent, independent/control) were selected as they were the most popular measures used in the literature (Orlitzky 2001b; Kang et al. 2010; Saleh et al. 2011).

As the data is both on the same firms for the same variables (cross-sectional data) over a nine year (2007-2015 inclusive) time period (time-series), the most appropriate choice of analytical tools are those which relate to panel data (Arellano 2013). A static linear pooled ordinary least squares model has been used.

Dependent variables

Market measure:

- Tobin's Q (TOBQ): ratio of the market value of a firm to the replacement cost of the firm's assets, based on (Market Cap + Total Liabilities + Preferred Equity + Minority Interests)/Total Assets.
- Excess returns (EXRET): Investment returns from a security that exceed a benchmark or index with a similar level of risk.

Accounting measures:

- Return on assets (ROA): percentage based measure of efficiency of asset utilisation, based on net income divided by average total assets;
- Return on equity (ROE): percentage based measure of returns to ordinary shareholders, based on net income available to ordinary shareholders divided by average total ordinary equity.

Risk measures:

- Weighted average cost of capital (WACC): A calculation of a firm's cost of capital in which each category of capital is proportionately weighted.

- Beta: a measure of risk expressed as a firm's share price volatility relative to the market it trades in, measured as the opening and closing firm betas relative to the market betas for the period.

Independent/control variables:

- CSR score (ESG): Total CSR measure or ESG (Environmental, Social and Governance) Disclosure Score: a summarised Bloomberg score of environmental, social and governance scores, ranked between 0-100.
- Total assets (TOTASSET): proxy for firm size;
- Industry: variable based on Bloomberg's Global Industry Classification (GICs);
- Earnings before interest and tax (EBIT): a measure of the financial performance of a firm.

- Debt to equity: a measure of financial structure (leverage) of a company, measured as total debt/total equity.

Results and discussion

The summary statistics for the financial and CSR metrics are shown in table 1 below. Whilst the lower-level components of the CSR/ESG scores are not yet fully evaluated in this working paper, summary statistics are included for all key variables.

Table 1: Summary statistics for large-cap, mid-cap and small-cap samples

	Financial metrics										CSR			
Large cap	TOBQ	EXRET	ROA	ROE	HISTBETA	WACC	TOTASSET	EBIT	SALESGROW	DEBTEQY	ESG	ENV	SOC	GOV
Min	0.62	-7.01	-61.82	-183.47	0.15	2.18	334.36	-27,927.00	-83.29	0.00	0.00	0.00	0.00	0.00
Max	13.03	82.62	46.71	527.88	3.17	18.82	2,187,480.00	78,355.00	4,523.94	24,852.63	76.76	82.17	86.67	85.71
Mean	2.04	0.45	6.68	17.04	1.03	9.02	38,213.19	2,602.40	9.37	108.75	27.52	18.07	22.46	54.08
Std dev	1.20	2.34	7.49	24.10	0.26	2.26	128,274.97	5,626.77	83.39	575.50	15.51	18.89	17.84	12.93
Mid cap														
Min	0.53	-11.09	-84.92	-163.82	0.05	0.00	112.04	-5,807.32	-81.03	0.00	0.00	0.00	0.00	0.00
Max	14.67	10.44	76.06	871.04	2.18	18.02	44,686.70	2,918.60	167.49	21,432.67	59.09	68.22	71.93	76.79
Mean	1.90	0.25	5.89	14.04	1.11	9.51	3,423.80	227.76	7.64	103.52	14.75	3.59	8.40	46.40
Std dev	1.15	1.91	7.84	30.58	0.28	2.39	3,494.40	328.40	18.46	582.51	8.31	8.50	10.03	15.39
Small cap														
Min	0.42	-10.16	-61.52	-379.68	-0.02	2.39	19.96	-2,157.00	-81.93	0.00	0.00	0.00	0.00	0.00
Max	15.43	22.89	88.01	185.84	2.85	26.27	27,421.00	1,684.00	1,436.47	213,151.28	42.64	40.31	59.65	69.64
Mean	1.77	0.29	4.59	7.59	1.14	10.09	1,117.77	63.88	8.84	129.79	9.57	0.64	2.85	36.50
Std dev	1.12	2.45	9.85	21.45	0.30	2.71	1,647.05	131.41	39.33	3,777.85	6.48	3.37	6.14	21.77

Note: ENV denotes environmental score, SOC denotes social score, GOV denotes governance score (all data from Bloomberg). These three are all subsets of the total CSR score, denoted ESG in Bloomberg. This resultant total score is a weighted average of ENV, SOC and GOV.

A number of observations can be made from the data. For example, contrary to prior literature, over the nine year time period of this paper, sales growth in mid-caps have been generally lower than both large and small-caps. This may well be a reflection as noted earlier that in times of recession, traders reduce their exposure to mid-caps, hence depressing share prices and reducing the availability of funds for mid-caps to invest in sales growth opportunities. In other respects, mid-caps appear to have performed more as expected, in the mid-range compared with large-caps and small-caps in metrics such as Tobin's Q, ROA, ROE, beta, WACC and EBIT.

With regards to the CSR (ESG) data, it appears that there are some firms which have scores of zero against their CSR entries. This finding may not be unexpected for some elements, such as environmental, given that not all industries warrant specific environmental concerns (e.g. financial institutions). However, there are substantial legislation/stock market requirements which demand minimum standards of governance, hence the zero scores in these areas are perhaps more unexpected.

Another observation from the CSR data is that environmental scores are lowest for all three sample groups – this may be the result of the relative weighting of firms in the sample for whom there are fewer environmental regulations. At the other end of the spectrum, all samples score generally higher in governance issues, which is perhaps not unexpected for listed firms operating under Sarbanes-Oxley rules.

Table 2 presents the correlation matrices for each of the samples in three panels. There are no particular high correlation results which would skew the results unduly, and where there are some higher correlations, for example in the case of ROA/ROE, they are not used in the same model.

Table 2: Correlation matrices – large, mid and small caps

Panel A:

Large cap	*TOBQ*	*TOTASSET*	*EBIT*	*ROA*	*ROE*	*SALESGROW*	*DEBTEQY*	*HISTBETA*	*ESG*	*EXRET*	*WACC*
TOBQ	1										
TOTASSET	-0.139	1									
EBIT	-0.039	0.602	1								
ROA	0.431	-0.091	0.168	1							
ROE	0.236	-0.037	0.168	0.666	1						
SALESGROW	0.154	-0.023	-0.007	-0.026	-0.045	1					
DEBTEQY	-0.009	0.076	0.038	-0.038	0.203	-0.003	1				
HISTBETA	-0.086	0.120	-0.057	-0.115	-0.152	-0.015	0.007	1			
ESG	-0.116	0.230	0.311	0.038	0.112	-0.073	0.033	-0.155	1		
EXRET	0.139	-0.057	-0.042	0.045	0.039	0.040	-0.004	0.019	-0.109	1	
WACC	0.271	-0.252	-0.138	0.235	0.034	0.051	-0.105	0.495	-0.226	0.17117	1

Panel B:

Mid cap	*TOBQ*	*TOTASSET*	*EBIT*	*ROA*	*ROE*	*SALESGROW*	*DEBTEQY*	*HISTBETA*	*ESG*	*EXRET*	*WACC*
TOBQ	1										
TOTASSET	-0.377	1									
EBIT	-0.027	0.278	1								
ROA	0.510	-0.234	0.367	1							
ROE	0.224	-0.097	0.250	0.503	1						
SALESGROW	0.139	-0.048	0.151	0.236	0.112	1					
DEBTEQY	-0.002	0.030	0.021	-0.034	0.208	-0.0030	1				
HISTBETA	-0.142	0.103	-0.017	-0.155	-0.065	-0.0489	0.018	1			
ESG	-0.090	0.219	0.118	-0.030	0.028	-0.1130	0.045	0.054	1		
EXRET	0.202	-0.124	-0.026	0.113	0.026	0.0984	-0.031	0.007	-0.056	1	
WACC	0.166	-0.250	-0.011	0.178	0.065	0.0609	-0.069	0.497	-0.037	0.16462	1

Panel C:

Small cap	*TOBQ*	*TOTASSET*	*EBIT*	*ROA*	*ROE*	*SALESGROW*	*DEBTEQY*	*HISTBETA*	*ESG*	*EXRET*	*WACC*
TOBQ	1										
TOTASSET	-0.242	1									
EBIT	-0.021	0.450	1								
ROA	0.406	-0.131	0.323	1							
ROE	0.278	-0.090	0.349	0.803	1						
SALESGROW	0.132	-0.014	0.081	0.223	0.131	1					
DEBTEQY	-0.015	0.114	-0.027	-0.022	-0.125	0.023	1				
HISTBETA	-0.195	0.081	-0.060	-0.213	-0.206	-0.017	0.043	1			
ESG	-0.029	0.213	0.119	0.037	0.052	0.016	0.007	-0.112	1		
EXRET	0.152	-0.091	-0.022	0.080	0.062	0.084	-0.012	0.015	-0.114	1	
WACC	0.123	-0.334	-0.129	0.070	0.025	0.046	-0.050	0.360	-0.111	0.110	1

The regression results for Tobin's Q across all three samples are presented in table 3. Overall, the findings appear to disagree with many previous studies in that there appears to be a significant and very slightly negative correlation between CSR performance and CFP for large-caps, however there is no similar finding for mid or small-caps, which does support previous studies that any CSR-CFP effect is reduced in smaller firms. There appears to be very significant ($p<0.01$) and positive effects on Tobin's Q from sales growth, excess returns and weighted average cost of capital, which are not surprising given the influence of excess returns on market values, however the direction of the relationship between Tobin's Q and WACC might be expected to be negative, rather than positive, given the perception of risk on firms with higher WACC. In terms of sales growth, a higher Tobin's Q might well reflect the economic rents expected from previous sales growth performance feeding into future expectations. There is a negative but significant ($p<0.01$) effect of beta on Tobin's Q, suggesting that more volatile firms do see a reduced Tobin's Q.

The basic industry variable in all the correlations against which the other sectors are compared is Basic Materials, therefore any variations are relative to this sector. From table 3, we note a wide variety of effects of different industry sectors on Tobin's Q outcomes above that of basic materials; some negative where there is less regulation required in for example environmental areas (e.g. Financial and Utilities sectors) and others positive, such as non-cyclical Consumer Goods, where greater attention may well be paid to CSR activities due to their higher visibility to the final consumer.

Table 3: Regression results for Tobin's Q: large, mid and small-cap samples

	Tobin's Q												
Coefficients :	Large cap				Mid cap				Small cap				
	Estimate	Std. Error	t-value		Estimate	Std. Error	t-value		Estimate	Std. Error	t-value		
(Intercept)	1.631	0.161	10.113	***	2.125	0.153	13.846	***	1.927	0.144	13.362	***
ESG	-0.004	0.001	-3.287	**	0.000	0.003	0.150		0.005	0.003	1.546	
TOTASSET	0.000	0.000	0.536		-0.000	0.000	-12.693	***	-0.000	0.000	-9.617	***
EBIT	0.000	0.000	0.118		0.000	0.000	2.939	**	0.001	0.000	4.247	***
SALESGROW	0.002	0.000	7.602	***	0.005	0.001	4.024	***	0.003	0.000	6.046	***
DEBTEQY	0.000	0.000	2.411	*	0.000	0.000	1.255		0.000	0.000	1.486	
HISTBETA	-1.018	0.095	-10.738	***	-0.769	0.093	-8.245	***	-0.688	0.073	-9.367	***
INDCommunications	0.120	0.117	1.030		0.499	0.134	3.713	***	0.515	0.114	4.504	***
INDConsumer, Cyclical	0.090	0.100	0.894		0.341	0.097	3.510	***	0.053	0.097	0.544	
INDConsumer, Non-cyclical	0.428	0.098	4.362	***	0.397	0.096	4.159	***	0.368	0.100	3.684	***
INDDiversified	-0.944	0.366	-2.582	**								
INDEnergy	-0.350	0.109	-3.206	**	0.169	0.120	1.411		0.026	0.125	0.212	
INDFinancial	-0.291	0.107	-2.718	**	0.038	0.099	0.387		0.006	0.117	0.049	
INDIndustrial	-0.010	0.099	-0.098		0.075	0.091	0.824		0.126	0.097	1.297	
INDTechnology	0.472	0.110	4.293	***	0.423	0.101	4.196	***	0.334	0.105	3.172	**
INDUtilities	-0.540	0.119	-4.555	***	-0.276	0.124	-2.220	*	-0.329	0.158	-2.086	*
EXRET	0.037	0.008	4.544	***	0.080	0.011	7.409	***	0.055	0.008	7.194	***
WACC	0.165	0.011	14.617	***	0.065	0.011	5.952	***	0.046	0.008	5.629	***
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1												
Total Sum of Squares:			4,764				3,313				4,048	
Residual Sum of Squares:			3,672				2,534				3,397	
R-Squared:			0.229				0.235				0.161	
Adj. R-Squared:			0.228				0.234				0.160	
F-statistic:			57.1702 on 17 & 3267 DF				47.9148 on 16 & 2494 DF				38.2146 on 16 & 3187 DF	
p-value			<2.22e-16				<2.22e-16				<2.22e-16	
Balanced Panel: n=, T=, N=	365	9	3,285		279	9	2,511		356	9	3,204	
Oneway (individual) effect Pooling Model												

With regards to the effect of CSR on excess returns as shown in table 4 below, there is an apparently curious effect. There is a significant and negative effect on excess returns from higher CSR scores in both large and small-caps, but no significant effect at all in mid-caps. This suggests that higher CSR scores inhibit the generation of excess returns over the average of the market, although it is not immediately clear why that might be the case.

That said, the low R^2 for this model suggests that a review of the variables used could improve the explanatory power of the regression.

Table 4: Regression results for excess returns: large, mid and small-cap samples

	EXCESS RETURNS														
Coefficients :	Large cap				Mid cap				Small cap			
	Estimate	Std. Error	t-value		Estimate	Std. Error	t-value		Estimate	Std. Error	t-value	
(Intercept)	-0.812	0.347	-2.340	*	-0.819	0.284	-2.883	**	0.072	0.337	0.213	
ESG	-0.009	0.003	-3.151	**	-0.004	0.005	-0.798		-0.038	0.007	-5.515	***
TOTASSET	0.000	0.000	0.397		-0.000	0.000	-2.351	*	-0.000	0.000	-1.921	.
EBIT	0.000	0.000	0.097		-0.000	0.000	-0.611		0.000	0.000	0.516	
SALESGROW	0.001	0.000	1.281		0.009	0.002	4.097	***	0.005	0.001	4.719	***
DEBTEQY	0.000	0.000	1.035		-0.000	0.000	-0.813		-0.000	0.000	-0.228	
HISTBETA	-0.732	0.204	-3.597	***	-0.303	0.173	-1.754	.	-0.119	0.172	-0.696	
INDCommunications	0.094	0.251	0.373		-0.234	0.249	-0.941		-0.108	0.267	-0.404	
INDConsumer, Cyclical	-0.050	0.216	-0.231		0.068	0.180	0.381		-0.050	0.228	-0.219	
INDConsumer, Non-cyclical	0.103	0.211	0.490		0.228	0.177	1.289		-0.152	0.233	-0.650	
INDDiversified	-0.793	0.787	-1.008									
INDEnergy	-0.350	0.235	-1.488		-0.444	0.222	-2.002	*	-0.630	0.291	-2.165	*
INDFinancial	0.488	0.230	2.122	*	0.127	0.183	0.692		-0.123	0.272	-0.451	
INDIndustrial	-0.155	0.213	-0.726		-0.046	0.169	-0.272		-0.236	0.227	-1.038	
INDTechnology	-0.293	0.236	-1.241		-0.001	0.187	-0.004		-0.346	0.246	-1.406	
INDUtilities	0.219	0.255	0.858		0.267	0.231	1.156		0.180	0.369	0.488	
WACC	0.247	0.024	10.336	***	0.156	0.020	7.763	***	0.090	0.019	4.757	***
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1												
Total Sum of Squares:			17,925				9,190				19,224	
Residual Sum of Squares:			17,017				8,709				18,560	
R-Squared:			0.051				0.052				0.035	
Adj. R-Squared:			0.050				0.052				0.034	
F-statistic:			10.9081 on 16 & 3268 DF				9.18242 on 15 & 2495 DF				7.6116 on 15 & 3188 DF	
p-value:			<2.22e-16				<2.22e-16				<2.22e-16	
Balanced Panel: n=, T=, N=	365	9	3,285		279	9	2,511		356	9	3,204	
Oneway (individual) effect Pooling Model												

Table 5: Regression results for ROE: large, mid and small-cap samples

	ROE											
Coefficients :	Large cap				Mid cap				Small cap			
	Estimate	Std. Error	t-value		Estimate	Std. Error	t-value		Estimate	Std. Error	t-value	
(Intercept)	20.391	3.352	6.083	***	9.479	4.301	2.204	*	17.598	2.611	6.741	***
ESG	0.112	0.028	3.980	***	0.115	0.071	1.610		0.139	0.054	2.577	*
TOTASSET	-0.000	0.000	-6.877	***	-0.001	0.000	-6.239	***	-0.003	0.000	-13.127	***
EBIT	0.001	0.000	11.744	***	0.026	0.002	13.702	***	0.073	0.003	25.365	***
SALESGROW	-0.015	0.005	-3.250	**	0.095	0.032	3.011	**	0.046	0.009	5.404	***
DEBTEQY	0.009	0.001	13.351	***	0.011	0.001	11.279	***	-0.000	0.000	-4.830	***
HISTBETA	-17.020	1.970	-8.639	***	-10.025	2.615	-3.834	***	-13.258	1.330	-9.968	***
INDCommunications	-7.371	2.426	-3.038	**	3.981	3.764	1.058		-1.248	2.071	-0.603	
INDConsumer, Cyclical	-2.588	2.087	-1.240		5.238	2.720	1.926	.	-1.542	1.763	-0.875	
INDConsumer, Non-cyclical	-1.378	2.038	-0.676		0.645	2.678	0.241		-4.058	1.808	-2.244	*
INDDiversified	-9.290	7.602	-1.222									
INDEnergy	-10.420	2.269	-4.592	***	-1.618	3.353	-0.483		-0.420	2.256	-0.186	
INDFinancial	-5.199	2.222	-2.340	*	0.068	2.771	0.024		0.717	2.109	0.340	
INDIndustrial	3.045	2.057	1.480		1.029	2.559	0.402		-1.168	1.758	-0.665	
INDTechnology	-3.332	2.283	-1.459		-1.999	2.826	-0.707		-2.743	1.906	-1.439	
INDUtilities	-12.011	2.464	-4.875	***	-2.998	3.488	-0.860		-4.510	2.858	-1.578	
EXRET	0.294	0.169	1.742	.	0.060	0.303	0.199		0.374	0.137	2.724	**
WACC	1.308	0.235	5.570	***	1.024	0.307	3.331	***	0.419	0.147	2.855	**
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1												
Total Sum of Squares:			1,907,800				2,347,700				1,473,200	
Residual Sum of Squares:			1,586,300				1,990,900				1,112,800	
R-Squared:			0.169				0.15199				0.245	
Adj. R-Squared:			0.168				0.15096				0.243	
F-statistic:			38.9505 on 17 & 3267 DF				27.9384 on 16 & 2494 DF				64.5062 on 16 & 3187 DF	
p-value:			<2.22e-16				<2.22e-16				<2.22e-16	
Balanced Panel: n=, T=, N=	365	9	3,285		279	9	2,511		356	9	3,204	
Oneway (individual) effect Pooling Model												

The regression results for one of the accounting based financial performance metrics, Return on Equity is presented in table 5. Interestingly, as with the finding for excess returns, there is a positive and significant effect from CSR on ROE for large-caps (in common with previous studies) and from small-caps (though at a lower level of statistical significance). However, there is no finding for mid-caps, where it appears CSR is of no impact on ROE (unlike other variables such as total assets, EBIT, sales growth, leverage, beta and WACC). Whilst some studies yield very low R-squared results, this model ranges from 15.2% - 24.5%, which although not high, does suggest a reasonable level of robustness.

For brevity, the second regression for accounting-based financial metrics, Return on Assets (ROA) is not presented since it showed that CSR had only a very small positive effect on ROA in small firms, but only to a statistical significance of $p<0.05$. There was no statistically significant effect in either the large-cap and mid-cap samples.

The effect of CSR on risk, as proxied by weighted average cost of capital (WACC) is expected to be negative and significant; however the results as indicated in table 6 appear to suggest that whilst there is indeed a very small negative impact for large-caps, there is no such impact for mid or small-caps. This is perhaps because investors in those smaller firms are neither as aware or as interested in CSR as a method of mitigating risk, Since larger firms tend to attract the attention of institutional shareholders and analysts who regard CSR as evidence of good and proactive management, as supported by Sturdivant and Ginter (1977), Waddock and Graves (1994) and Gama Boaventura et al. (2012), then it is perhaps quite credible that CSR may not be of benefit to smaller firms who have a different investor base.

Table 6: Regression results for weighted average cost of capital: large, mid and small-cap samples

	WEIGHTED AVERAGE COST OF CAPITAL														
Coefficients :	Large cap				Mid cap				Small cap						
	Estimate	Std. Error	t-value		Estimate	Std. Error	t-value		Estimate	Std. Error	t-value				
(Intercept)	6.334	0.224	28.293	***	5.819	0.255	22.834	***	7.279	0.287	25.321	***			
ESG	- 0.013	0.002	- 6.170	***	- 0.005	0.005	- 1.089		0.007	0.006	1.027				
TOTASSET	- 0.000	0.000	- 16.707	***	- 0.000	0.000	- 14.212	***	- 0.001	0.000	- 19.379	***			
EBIT	0.000	0.000	4.451	***	0.001	0.000	4.226	***	0.001	0.000	3.477	***			
SALESGROW	0.001	0.000	2.870	**	0.005	0.002	2.417	*	0.002	0.001	2.362	*			
DEBTEQY	- 0.000	0.000	- 5.565	***	- 0.000	0.000	- 4.090	***	- 0.000	0.000	- 1.506				
HISTBETA	3.419	0.134	25.498	***	3.772	0.153	24.700	***	3.000	0.151	19.811	***			
INDCommunications	- 0.119	0.181	- 0.659		0.078	0.245	0.317		- 0.158	0.250	- 0.631				
INDConsumer, Cyclical	0.010	0.156	0.067		0.347	0.177	1.958	.	- 0.137	0.213	- 0.644				
INDConsumer, Non-cyclical	- 0.620	0.151	- 4.096	***	- 0.512	0.174	- 2.942	**	- 0.338	0.218	- 1.549				
INDDiversified	- 0.350	0.566	- 0.618												
INDEnergy	0.007	0.169	0.042		0.540	0.218	2.474	*	0.136	0.272	0.499				
INDFinancial	- 1.074	0.165	- 6.527	***	- 0.538	0.180	- 2.986	**	- 1.590	0.253	- 6.288	***			
INDIndustrial	- 0.161	0.153	- 1.053		0.463	0.166	2.783	**	0.179	0.212	0.846				
INDTechnology	0.790	0.170	4.657	***	0.564	0.184	3.067	**	0.627	0.230	2.727	**			
INDUtilities	- 2.438	0.179	- 13.651	***	- 1.335	0.226	- 5.916	***	- 2.005	0.343	- 5.845	***			
EXRET	0.128	0.012	10.336	***	0.151	0.019	7.763	***	0.078	0.016	4.757	***			
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1															
Total Sum of Squares:			16,817				14,342				23,556				
Residual Sum of Squares:			8,811				8,453				16,208				
R-Squared:			0.476				0.411				0.312				
Adj. R-Squared:			0.474				0.408				0.310				
F-statistic:			185.605 on 16 & 3268 DF				115.865 on 15 & 2495 DF				96.3513 on 15 & 3188 DF				
p-value			<2.22e-16				<2.22e-16				<2.22e-16				
Balanced Panel: n=, T=, N=	365	9	3,285		279	9	2,511		356	9	3,204				
Oneway (individual) effect Pooling Model															

Another measure of risk is company beta, which is an assessment of the relative volatility of the firm versus its general market. Hence beta has been used as another test of risk in this paper. Again, we would expect CSR to reduce risk and hence have a negative and significant effect on beta; following from the results in table 7, this appears to be true for both large and small-caps (although only to a very slight degree), but at a high level of statistical significance. There is no such finding for mid-caps – which provokes the question why should CSR reduce risk in large and small-caps but not in mid-caps? Is there something different in the underlying CSR activities in mid-caps which affects risk, or at least share volatility, differently? Indeed, McWilliams and Siegel suggested as long ago as 2001 that the interplay of the various elements of CSR contributes to each firm's differentiation strategy and hence competitive advantage. The total CSR score used in this study from Bloomberg comprises of three subcomponents: environmental, social and governance. Perhaps therefore it is not the absolute score which is important in risk reduction but the specific area in which the scores are highest. Further research into the lower level constituents of the CSR score is required to ascertain more precisely what the interaction might be. Equally, this further research should extend to a greater analysis of the industry effects which clearly also exert a significant (and negative) influences in firms of large, mid and small capitalisation.

Table 7: Regression results for equity beta: large, mid and small-cap samples

	BETA														
Coefficients :	Large cap				Mid cap				Small cap						
	Estimate	Std. Error	t-value		Estimate	Std. Error	t-value		Estimate	Std. Error	t-value				
(Intercept)	0.701	0.027	25.849	***	0.691	0.030	23.103	***	0.911	0.031	29.594	***			
ESG	-0.001	0.000	-5.148	***	-0.001	0.001	-0.934		-0.006	0.001	-8.208	***			
TOTASSET	0.000	0.000	19.862	***	0.000	0.000	13.054	***	0.000	0.000	16.177	***			
EBIT	-0.000	0.000	-12.065	***	-0.000	0.000	-5.404	***	-0.000	0.000	-7.549	***			
SALESGROW	-0.000	0.000	-1.848	.	-0.001	0.000	-3.589	***	-0.000	0.000	-1.148				
DEBTEQY	0.000	0.000	2.745	**	0.000	0.000	3.123	**	0.000	0.000	1.424				
INDCommunications	-0.067	0.022	-3.097	**	-0.091	0.029	-3.171	**	-0.180	0.027	-6.576	***			
INDConsumer, Cyclical	-0.066	0.018	-3.579	***	-0.134	0.021	-6.508	***	-0.047	0.023	-2.011	*			
INDConsumer, Non-cyclical	-0.176	0.018	-9.859	***	-0.156	0.020	-7.675	***	-0.267	0.024	-11.293	***			
INDDiversified	0.145	0.067	2.150	*											
INDEnergy	0.124	0.020	6.179	***	0.084	0.026	3.283	**	0.141	0.030	4.721	***			
INDFinancial	-0.038	0.020	-1.908	.	-0.163	0.021	-7.790	***	-0.216	0.028	-7.761	***			
INDIndustrial	-0.005	0.018	-0.278		-0.037	0.020	-1.888	.	-0.054	0.023	-2.326	*			
INDTechnology	-0.063	0.020	-3.103	**	-0.111	0.022	-5.139	***	-0.176	0.025	-7.001	***			
INDUtilities	-0.226	0.022	-10.491	***	-0.317	0.026	-12.214	***	-0.427	0.037	-11.436	***			
EXRET	-0.005	0.001	-3.597	***	-0.004	0.002	-1.754	.	-0.001	0.002	-0.696				
WACC	0.049	0.002	25.498	***	0.052	0.002	24.700	***	0.037	0.002	19.811	***			
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1															
Total Sum of Squares:			228.310				193.140				297.860				
Residual Sum of Squares:			125.100				116.740				197.380				
R-Squared:			0.452				0.396				0.337				
Adj. R-Squared:			0.450				0.393				0.336				
F-statistic:			168.503 on 16 & 3268 DF				108.851 on 15 & 2495 DF				108.195 on 15 & 3188 DF				
p-value			<2.22e-16				<2.22e-16				<2.22e-16				
Balanced Panel: n=, T=, N=	365	9	3,285		279	9	2,511		356	9	3,204				
Oneway (individual) effect Pooling Model															

As mentioned earlier, there is also an academic theory which suggests that the relationship between CSR and financial performance is not uni-directional, in that CSR may not impact financial performance, but that firms with superior financial performance actually score higher CSR because they have the funds/'slack resources' with which to invest in CSR (Ullmann 1985; Waddock & Graves 1997). For this reason, an additional regression was

estimated using CSR as the dependent variable and the financial variables as the independent variables. The results are produced in table 8 below.

Generally, the results indicate that higher market-based financial performance (Tobin's Q and excess returns) is actually negatively correlated with CSR in large-caps and for excess returns for small-caps, but that there is no statistically significant finding in the mid-cap sample. This would suggest that good financial performance in the market may not result in increased CSR scores. Interestingly, the R^2 in the excess returns regression is reasonable for the large-cap sample, but drops significantly for the mid-cap sample which suggests that there are more influences on CSR in mid-cap firms than are captured in the current model.

This anomaly with the mid-cap sample appears again when reviewing the accounting-based financial performance metric of ROE. Equally, a higher ROA result does not appear to influence CSR scores at all in any of the market company sizes, which was similar when the regression was reversed.

Table 8: Regression results for CSR versus all financial variables: large, mid and small-cap samples

ESG vs ALL VARIABLES

Coefficients :	Large cap				Mid cap				Small cap			
	Estimate	Std. Error	t-value		Estimate	Std. Error	t-value		Estimate	Std. Error	t-value	
(Intercept)	53.414	1.897	28.164	***	17.766	1.200	14.805	***	13.227	0.854	15.491	***
TOBQ	-0.905	0.240	-3.771	***	-0.027	0.176	-0.153		0.101	0.113	0.891	
ROA	-0.025	0.050	-0.495		0.003	0.030	0.089		0.005	0.020	0.258	
ROE	0.056	0.014	3.929	***	0.009	0.006	1.431		0.012	0.009	1.354	
TOTASSET	0.000	0.000	5.653	***	0.001	0.000	9.259	***	0.001	0.000	10.559	***
EBIT	0.001	0.000	9.514	***	0.001	0.001	2.511	*	-0.001	0.001	-1.073	
SALESGROW	-0.008	0.003	-2.626	**	-0.051	0.009	-5.721	***	0.003	0.003	1.177	
DEBTEQY	-0.000	0.000	-0.017		0.000	0.000	1.470		-0.000	0.000	-0.499	
HISTBETA	-6.346	1.248	-5.087	***	-0.596	0.755	-0.790		-3.286	0.446	-7.366	***
INDCommunications	-15.720	1.479	-10.628	***	-3.998	1.056	-3.787	***	-2.183	0.683	-3.195	**
INDConsumer, Cyclical	-14.359	1.268	-11.329	***	-2.457	0.763	-3.218	**	-1.301	0.580	-2.242	*
INDConsumer, Non-cyclical	-14.001	1.240	-11.287	***	-3.956	0.750	-5.271	***	-2.430	0.596	-4.076	***
INDDiversified	-22.522	4.690	-4.802	***								
INDEnergy	-8.085	1.403	-5.764	***	-3.044	0.939	-3.242	**	0.159	0.743	0.214	
INDFinancial	-20.923	1.327	-15.763	***	-5.787	0.768	-7.533	***	-2.897	0.693	-4.183	***
INDIndustrial	-12.527	1.253	-9.995	***	-1.965	0.717	-2.742	**	-0.609	0.579	-1.052	
INDTechnology	-10.237	1.406	-7.282	***	-2.562	0.795	-3.221	**	-2.570	0.628	-4.096	***
INDUtilities	-9.697	1.523	-6.367	***	-5.511	0.974	-5.658	***	2.626	0.941	2.790	**
EXRET	-0.310	0.105	-2.959	**	-0.067	0.086	-0.776		-0.258	0.045	-5.705	***
WACC	-0.783	0.152	-5.136	***	-0.103	0.088	-1.173		0.038	0.049	0.786	
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1												
Total Sum of Squares:			790,210				173,390				134,300	
Residual Sum of Squares:			606,320				156,340				120,570	
R-Squared:			0.233				0.098				0.102	
Adj. R-Squared:			0.231				0.098				0.102	
F-statistic:			52.1195 on 19 & 3265 DF				15.0956 on 18 & 2492 DF				20.1382 on 18 & 3185 DF	
p-value:			<2.22e-16				<2.22e-16				<2.22e-16	
Balanced Panel: n=, T=, N=	365	9	3,285		279	9	2,511		356	9	3,204	
Oneway (individual) effect Pooling Model												

Regarding the effects of risk on CSR, for large caps, there is a significant ($p<0.01$) and negative effect from both weighted average cost of capital and beta for large caps, and a similarly significant and negative effect for small caps for beta, but no findings at all for mid-

caps. This suggests that higher risk companies have lower CSR scores; indicating that perhaps higher risk firms regard CSR as unnecessary, or as an investment which will not reduce WACC or reduce company volatility.

One final piece of analysis was conducted to test the theory of McGuire et al. initially proposed back in 1988: does financial performance benefit from a higher CSR score from the prior year or indeed, does a higher CSR score derive from a previous year's superior financial performance? Firstly CSR was lagged against the independent variables to test whether prior good CSR performance would filter through to better performance in a later year. Only one year was lagged since any CSR 'news' would normally be expected to impact quite quickly on financial performance, particularly those variables related to the market. For brevity, the detailed regressions are not shown, but the impact of lagging was minimal. In the regressions of lagged CSR against Tobin's Q, excess returns, ROE, ROA and beta), there were no significant findings for mid-caps, but all other relationships held as without lagging for large and small caps. The only exception was for WACC; prior year's good CSR performance was highly significant ($p<0.01$) and positive for all sized firms. This suggests that there is some acknowledgement in capital providers in all sized firms that previous good CSR performance may support the theory of good management ((Sturdivant & Ginter 1977; Waddock & Graves 1997; Gama Boaventura et al. 2012) and reduce risk and hence lower the cost of capital.

Secondly, all the financial performance variables were lagged by one year against CSR, to test whether there was any indication that good prior financial performance would result in better CSR scores as funds are created to invest in additional CSR activities. Again the results indicate the same anomaly found throughout much of this paper: there is a statistically significant effect on CSR of good performance in the most of the key financial variables from prior years (Tobin's Q, ROE, beta and WACC) for large and small-caps (although the finding for ROE did not hold for small-caps, but there is much less evidence supporting a similar finding for mid-caps, as only lagged ROE resulted in a positive and moderately significant ($p<0.05$) effect.

Overall these lagging findings and reverse 'causality' regressions for the large-caps and to a slightly lesser extent, the small-caps, do tend to support Waddock and Graves' (1997) and Orlitzky et al.'s (2003) concept of the 'virtuous circle' of CFP and CSR, in that higher performing CSR companies tend to have superior financial results and vice versa and that good prior performance does support better future outcomes, irrespective of which came first, the CSR or the financial performance.

Conclusions and suggestions for further research

There is clearly evidence that CSR and financial performance are linked in many ways for both and large and small-cap firms which does not appear to be the case for mid-caps. Indeed, in many regressions, the R-squared was lower for the mid-cap models, suggesting that there are additional variables which would explain the variances in the findings (both financial and in the CSR scores) which are not yet adequately captured in the current models. Further

research should be carried out to attempt to determine what these additional explanatory variables might be; indeed, as McWilliams and Siegel (2001) asserted, the exploitation of the different attributes which make up CSR are intrinsic to the competitive advantage (and hence financial success) of the firm. It is perhaps this interplay among the constituents of CSR (such as social, environment or governance activities) which manifests itself differently in mid-caps in their unique 'middle-ground' environment. This environment as stated earlier is less under scrutiny from investors and analysts than the large and small-caps (Kolefas & Scalise 2012), despite its historic good investor returns. This may mean on the one hand less inherent 'necessity' or pressure from investors to adopt CSR activities (if firms are doing well, there is perhaps less incentive to change anything), but equally may mean those firms that do carry out such activities do not see the same rewards from doing so than their large or small-sized counterparts. For example, more work could be done on analysing the types of investors in the different market sectors (institutional versus individual, or levels of insider ownership) to determine whether this has a bearing on shareholder expectations to 'do' and reward CSR.

We believe that there is evidence that the mid-cap sector of the market has unique characteristics which affect the relationship between CSR and CFP in different ways to large-caps and small-caps and therefore this paper is of interest to those firms in that centre area of the market who may choose to react differently to CSR as a result. Whilst this working paper is still in a nascent stage, it seems apparent that the findings thus far are of interest to investors, analysts and managers who are interested in CSR and financial performance, but also in the unique 'sweet spot' (Goldberg 2016; Light 2016; Kolefas & Scalise 2012) that mid-caps inhabit and which appears to manifest itself in unexpected ways.

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